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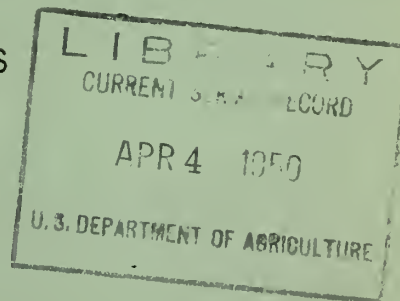
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FEDERAL-STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for
Arizona

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture



Data included in this report were obtained by the agency named above in cooperation with the Federal, State and local organizations listed on the last page of this report.

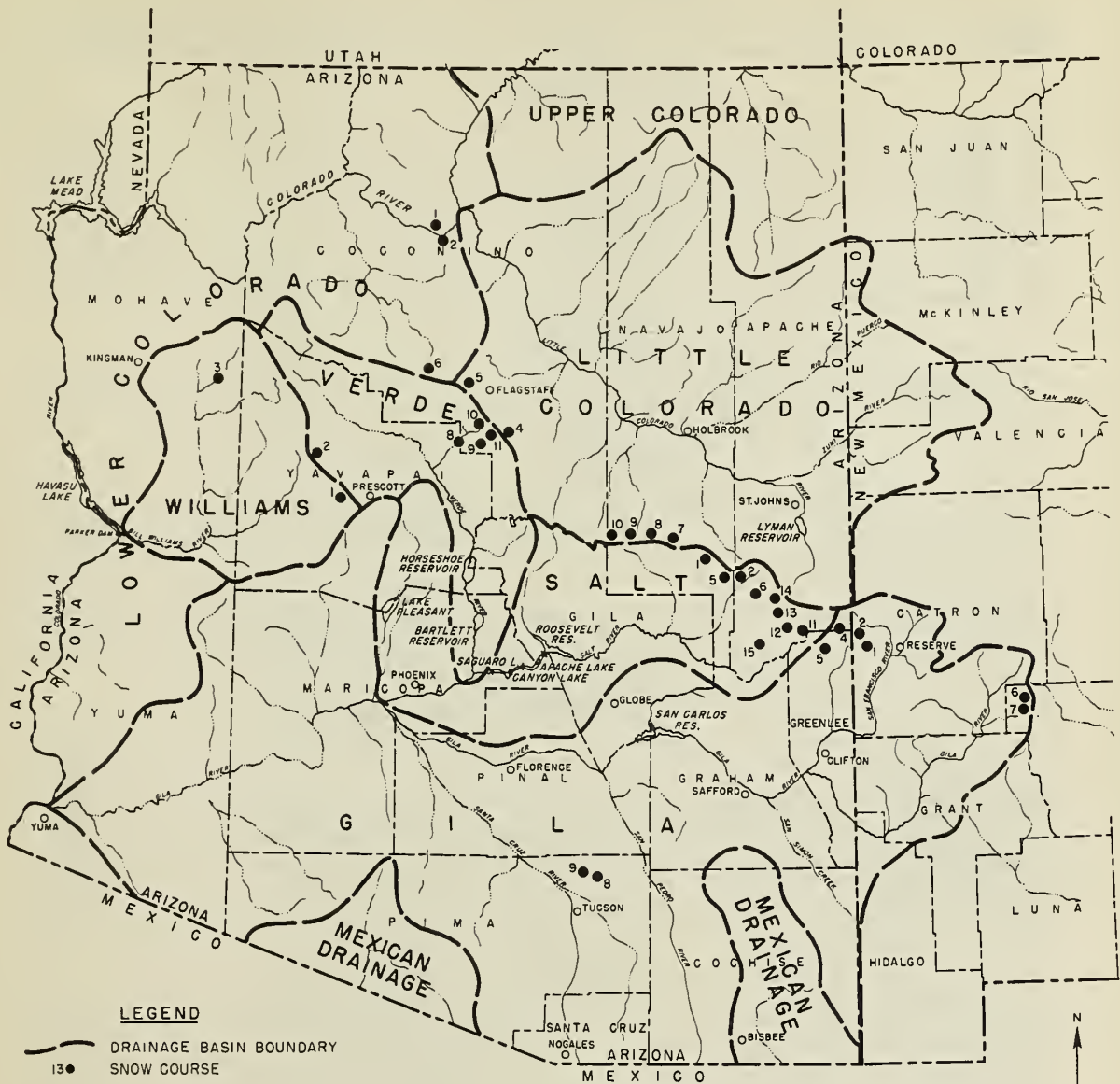
As of
MAR. 15, 1950

FEDERAL--STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
FOR
ARIZONA

Report Prepared
by
Burke Peterson--Irrigation Engineer

Division of Irrigation
Soil Conservation Service
Room 24, Post Office Building
Phoenix, Arizona





INDEX TO SNOW COURSES

NUMBER	NAME	ELEVATION
<u>LITTLE COLORADO RIVER</u>		
1.	Forest Dale	6,000
2.	McNary	7,200
3.	Nutriosio	8,500
4.	Mormon Lake	7,350
5.	Fort Valley	7,350
7.	Gentry	7,600
8.	Heber	7,600
9.	Canyon Creek	7,500
10.	Elk	7,600
11.	Mormon Mountain	7,500
<u>WILLIAMS RIVER</u>		
1.	Iron Springs	6,200
2.	Camp Wood	5,700
3.	Willow Ranch	5,000
<u>GILA RIVER</u>		
1.	Frisco Divide (N.M.)	8,000
2.	State Line (N.M.)	8,000
3.	Nutriosio	8,500
4.	Coronado Trail	8,000
5.	Beaver Head	8,000
6.	Taylor Creek (N.M.)	7,850
7.	Inman (N.M.)	7,800
8.	Rose Canyon	7,300
9.	Bear Wallow	8,100
<u>VERDE RIVER</u>		
1.	Iron Springs	6,200
2.	Camp Wood	5,700
3.	Mingus Mountain	7,100
4.	Morman Lake	7,350
5.	Fort Valley	7,350
6.	Chalender	7,100
8.	Munds Park	6,500
9.	Casner Park	6,930
10.	Antelope Park	7,300
11.	Mormon Mountain	7,500
<u>SALT RIVER</u>		
1.	Forest Dale	6,000
2.	McNary	7,200
3.	Nutriosio	8,500
4.	Coronado Trail	8,000
5.	Milk Ranch	7,000
6.	McKay	8,250
7.	Gentry	7,600
8.	Heber	7,600
9.	Canyon Creek	7,500
10.	Elk	7,600
11.	Big Lake Knoll	8,800
12.	Maverick Fork	9,050
13.	Baldy	9,000
14.	Ft. Apache	9,000
15.	Pacheta	7,800
<u>LOWER COLORADO RIVER</u>		
1.	Bright Angel	8,400
2.	Grand Canyon	7,500
5.	Fort Valley	7,350
6.	Chalender	7,100

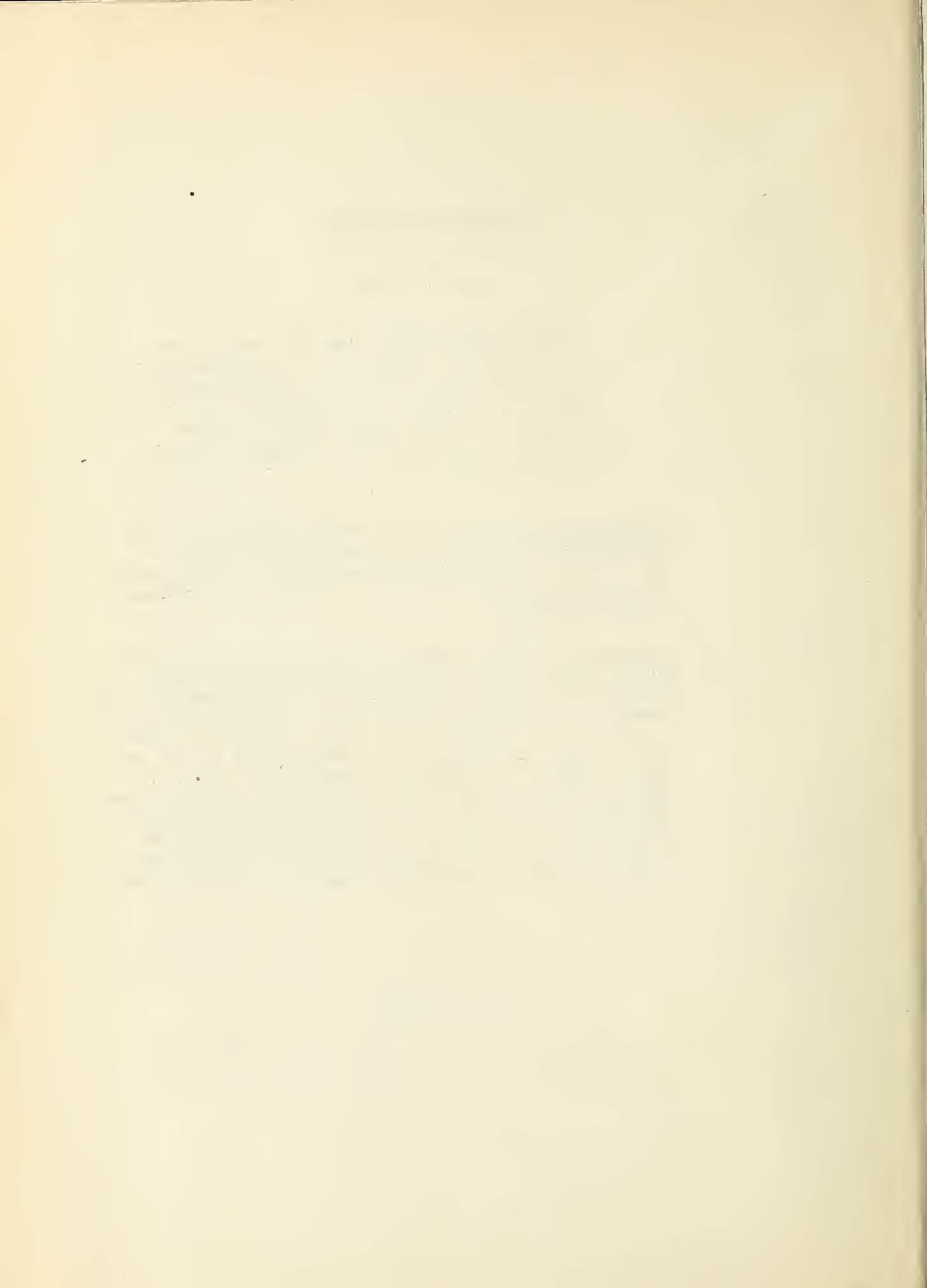
WATER SUPPLY OUTLOOK

Arizona
March 15, 1950

* * * * *
* March 15 snow surveys show that except for *
* the areas above 8,000 feet, most of the snow *
* has melted from the principal watersheds of *
* the state. Stream flow during the past month*
* has been far below normal. Soil moisture *
* conditions at the higher elevations are gen- *
* erally very good. *
* * * * *

Precipitation Throughout the state precipitation has been well below normal. Soil moisture conditions on the Salt and Verde drainage are very good, while soil moisture conditions on the Gila drainage and southern ranges are poor.

Snow Cover The only snow of any consequence remaining in the state lies in the Big Lake area of the White Mountains and at the North Rim of the Grand Canyon. The snow cover at Big Lake still contains about 6 inches of water. There has been little melt. With a warm spell or warm rains in this area, a little runoff should result. However, with continued intermittent freezing and melting as has been the weather pattern, most of the water will go into the ground or evaporate. Snow cover has been very poor on the Gila watershed. There has been no increased reservoir storage in the San Carlos due to snow melt. The Verde drainage is generally bare of snow.



Runoff It appears that the peak runoff into the state's reservoirs from snow melt has occurred. The Verde River has been steadily dropping from around 2500 cubic feet per second at the first of the month, to slightly over 200 second feet on this date. The Salt River has not peaked this season, but has remained constant between 400 and 600 cubic feet per second. Runoff has been so poor on the Gila River that the water users are drawing on storage in the San Carlos reservoir.

Reservoir Storage The total stored water in the reservoirs on the Salt River is 75% of normal and 135% of last year, while the stored water in the Verde reservoirs is slightly below normal and 45% of last year. The comparatively good storage in the Salt reservoirs is due to the good runoff of last year and not from runoff of this year.

San Carlos is storing 35% of normal and 35% of last year's storage at this time.

Lake Pleasant is storing 25% of normal. The total stored water in the reservoirs of the state is only 25% of capacity and 70% of normal.

Lake Mead contains 17,961,000 acre feet and Lake Havasu 662,000 acre feet.



TABLE I

ARIZONA SNOW SURVEYS MARCH 15, 1950

LOCATION		SNOW COVER MEASUREMENTS										
		Water Content (Inches)			Past Record							
DRAINAGE BASIN and SNOW COURSE	Number	Sec.	Twp.	Rge.	Elev.	Date of Survey	Snow Depth (Inches)	1950	1949	1948	Years of Record	Av. Water Content (Inches)
LITTLE COLORADO RIVER												
Forest Dale	1	2	9N	21E	6000	3/15	0	0	0.0	1.3	10	0.3
McNary	2	14	8N	23E	7200	3/15	0	0	0.0	4.1	10	1.5
Nutricos	3	23	6N	30E	8500	3/15	0	0	5.4	4.8	10	1.9
Mormon Lake	4	13	18N	8E	7350	3/15	0	0	16.6	11.4	3	9.3
Fort Valley	5	22	22N	6E	7350	3/15	0	0	8.8	2.0	3	3.6
Gentry	7	36	11N	15E	7600	3/15	0	0		New Course		
Heber	8	28	11N	15E	7600	3/15	0	0		New Course		
Canyon Creek	9	18	11N	15E	7500	3/15	0	0		New Course		
Elk	10	31	11N	14E	7600	3/15	0	0		New Course		
Mormon Mt.	11	14	18N	8E	7500	3/15	0	0		New Course		
GILA RIVER												
Prisco Divide	1	31	6S	20W	8000	3/17	0	0	2.9	5.6	10	1.7
State Line	2	6	6S	21W	8000	3/17	0	0	4.7	5.1	10	2.8
Nutricos	3	23	6N	30E	8500	3/15	0	0	5.4	4.8	10	1.9
Coronado Trail	4	26	5N	30E	8000	3/15	0	0	8.8	6.1	10	3.6
Beaver Head	5	13	4N	30E	8000	3/15	0	0	5.6	6.0	10	3.0
Taylor Creek	6	20	10S	10W	7850	3/15	0	0	N.R.	2.2	7	0.4
Inman	7	6	11S	10W	7800	3/15	0	0	N.R.	2.3	3	0.8
Rose Canyon	8	15	12S	16E	7300	3/15	0	0	0.0	1.3	2	0.7
Bear Wallow	9	6	12S	16E	8100	3/15	0	0	3.8	3.0	2	3.4

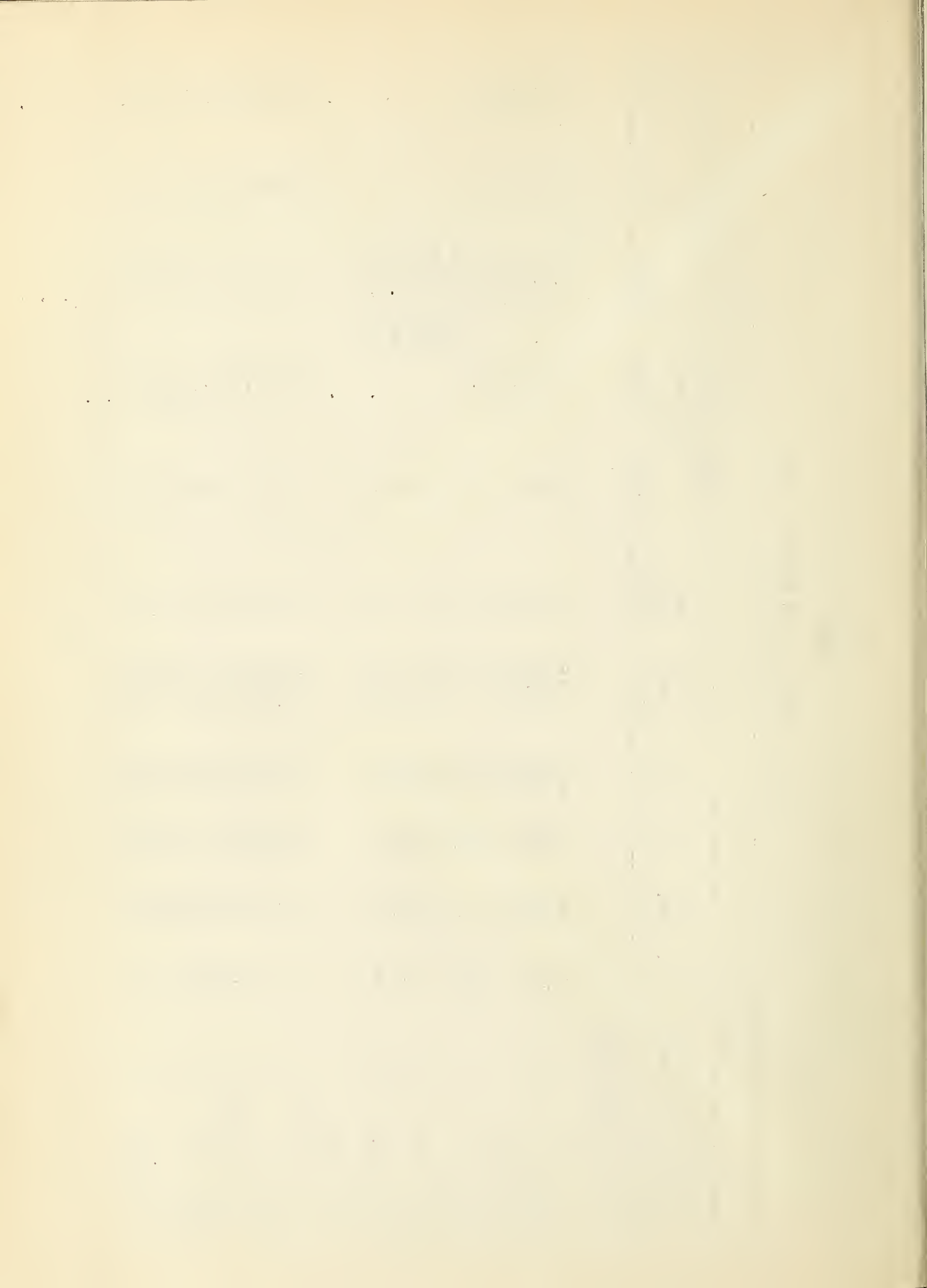


TABLE I
ARIZONA SNOW SURVEYS MARCH 15, 1950

LOCATION		SNOW COVER MEASUREMENTS												
		Water Content (Inches)					Past Record							
DRAINAGE BASIN and SNOW COURSE		Number	Sec.	Twp.	Rge.	Elev.	Date of Survey	Snow Depth (Inches)	1950	1949	1948	Years of Record	Avg. Water Content (Inches)	
WILLIAMS RIVER														
Iron Springs	1	22		14N	3W	6200	3/13	0	0	3.4	0.0	4	0.9	
Camp Wood	2	3		16N	6W	5700	3/15	0	0	0.8	0.0	4	0.2	
Willow Ranch	3	16		21N	11W	5000	3/15	0	0	N.R.	0.0	4	0.0	
SALT RIVER														
Forest Dale	1	2		9N	21E	6000	3/15	0	0	0.0	1.3	10	0.3	
McNary	2	14		8N	23E	7200	3/15	0	0	0.0	4.1	10	1.5	
Nutriosio	3	23		6N	30E	8500	3/15	0	0	5.4	4.8	10	1.9	
Coronado Trail	4	26		5N	30E	8000	3/15	0	0	8.8	6.1	10	3.6	
Milk Ranch	5	28		8N	23E	7000	3/15	0	0	0.0	1.2	9	0.6	
Gentry	7	36		11N	15E	7600	3/15	0	0	New Course				
Heber	8	28		11N	15E	7600	3/15	0	0	New Course				
Canyon Creek	9	18		11N	15E	7500	3/15	0	0	New Course				
Elk	10	31		11N	14E	7600	3/15	0	0	New Course				
Big Lake Knoll	11	2		5N	28E	8800	3/15	20.4	7.4	New Course				
Maverick Fork	12	13		6N	27E	9050	3/15	20.2	7.0	New Course				
Baldy	13	28		7N	27E	9000	3/15	8.4	3.0	New Course				
Ft. Apache	14	18		7N	27E	9000	3/15	8.7	2.7	New Course				
Pacheta	15					7800	3/15	0	0	New Course				

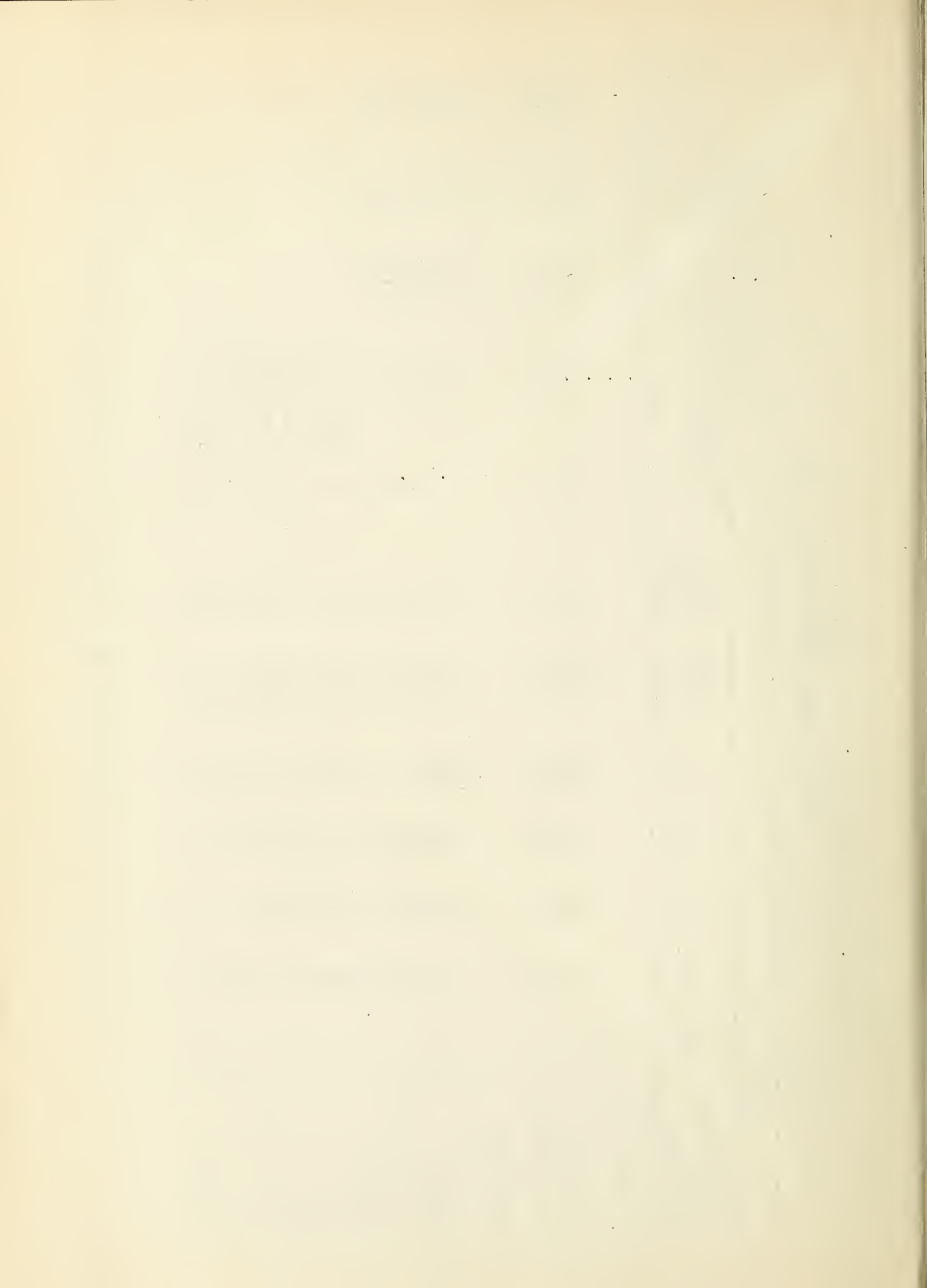


TABLE I

ARIZONA SNOW SURVEYS MARCH 15, 1950

LOCATION		SNOW COVER MEASUREMENTS											
DRAINAGE BASIN and SNOW COURSE	Number	Sec.	Twp.	Rge.	Elev.	Date of Survey	Snow Depth (Inches)	Water Content (Inches)			Years of Record	Av. Water Content (Inches)	
								1950	1949	1948			
VERDE RIVER													
Iron Springs	1	22	14N	3W	6200	3/13	0	0	3.4	0.0	4	0.9	
Camp Wood	2	3	16N	6W	5700	3/15	0	0	0.8	0.0	4	0.2	
Mingus Mt.	3	3	15N	2E	7100	3/15	0	0	N.R.	2.3	2	1.2	
Mormon Lake	4	13	18N	8E	7350	3/15	0	0	16.6	11.4	3	9.3	
Fort Valley	5	22	22N	6E	7350	3/15	0	0	8.8	2.0	3	3.6	
Chalender	6	27	22N	3E	7100	3/15	0	0	8.4	4.2	3	4.2	
Munds Park	8	7	18N	7E	6500	3/15	0	0	New Course				
Casner Park	9	19	18N	8E	6930	3/15	0	0	New Course				
Antelope Park	10	29	19N	8E	7300	3/15	0	0	New Course				
Mormon Mt.	11	14	18N	8E	7500	3/15	0	0	New Course				
LOWER COLORADO RIVER													
Bright Angel	1	34	33N	3E	8400	3/15	32.6	11.3	17.2	7.8	3	10.9	
Grand Canyon	2	21	30N	4E	7500	3/15	0	0	5.6	1.5	3	2.4	
Fort Valley	5	22	22N	6E	7350	3/15	0	0	8.8	2.0	3	3.6	
Chalender	6	27	22N	3E	7100	3/15	0	0	8.4	4.2	3	4.2	

TABLE 2
STATUS OF RESERVOIR STORAGE, MARCH 15, 1950

BASIN and STREAM	RESERVOIR	USABLE CAPACITY (1000 A.F.)	THOUSANDS ACRE FEET IN STORAGE About March 15				
			1950	1949	1948	1947	10 yr. Avg. 1939-1948
Agua Fria	Lake Pleasant	179	7	28	1	3	28
Colorado	Lake Havasu	688	662	576	593	621	559
Colorado	Lake Mead	27,935	17,961	17,950	18,888	16,431	19,312
Gila	San Carlos	1,200	89	242	6	18	241
Verde	Bartlett	179	70	95	17	24	73 ^a
Verde	Horseshoe	67	2	67	1	10	7 ^b
Salt	Roosevelt	1,382	311	282	38	101	543
Salt	Apache	245	225	120	158	232	191
Salt	Canyon	58	44	33	20	39	41
Salt	Saguaro	70	44	32	31	45	34

a - Average for years 1941 through 1948

b - Average for years 1946 through 1948

TABLE

OF THE

REVENUE OF THE

INDIAN TERRITORIES

1890				1891			
Land	100	100	100	100	100	100	100
Water	100	100	100	100	100	100	100
Mineral	100	100	100	100	100	100	100
Other	100	100	100	100	100	100	100
Total	400	400	400	400	400	400	400
Land	100	100	100	100	100	100	100
Water	100	100	100	100	100	100	100
Mineral	100	100	100	100	100	100	100
Other	100	100	100	100	100	100	100
Total	400	400	400	400	400	400	400
Land	100	100	100	100	100	100	100
Water	100	100	100	100	100	100	100
Mineral	100	100	100	100	100	100	100
Other	100	100	100	100	100	100	100
Total	400	400	400	400	400	400	400
Land	100	100	100	100	100	100	100
Water	100	100	100	100	100	100	100
Mineral	100	100	100	100	100	100	100
Other	100	100	100	100	100	100	100
Total	400	400	400	400	400	400	400
Land	100	100	100	100	100	100	100
Water	100	100	100	100	100	100	100
Mineral	100	100	100	100	100	100	100
Other	100	100	100	100	100	100	100
Total	400	400	400	400	400	400	400
Land	100	100	100	100	100	100	100
Water	100	100	100	100	100	100	100
Mineral	100	100	100	100	100	100	100
Other	100	100	100	100	100	100	100
Total	400	400	400	400	400	400	400

TABLE

OF THE

REVENUE OF THE

INDIAN TERRITORIES

LIST OF SNOW SURVEYORS

<u>SNOW COURSE</u>	<u>SURVEYOR</u>
Elk	T. A. Gerwitz
Canyon Creek	T. A. Gerwitz
Gentry	T. A. Gerwitz
Heber	T. A. Gerwitz
Forest Dale	W. E. Fair
McNary	W. E. Fair
Milk Ranch	W. E. Fair
Casner Park	M. F. Greaves
Munds Park	M. F. Greaves
Antelope Park	M. F. Greaves
Mormon Mt.	M. F. Greaves
Mormon Lake	M. F. Greaves
Mingus Mt.	H. Linn
Iron Springs	E. Saxby
Camp Wood	Mrs. C. C. Merritt
Willow Ranch	Tiny Miller
Grand Canyon	Sylvester, James
Bright Angel	Folsom, Hershey
Ft. Valley	A. P. Loska
Chalender	V. J. Schroeder
Bearwallow	W. H. Hughes
Rose Canyon	W. H. Hughes
Pacheta	J. Thorsen
Big Lake Knoll	Fredrickson, Gerwitz
Maverick Fork	Fredrickson, Gerwitz
Baldy	Fredrickson, Gerwitz
Ft. Apache	Fredrickson, Gerwitz
Taylor Creek	F. M. Inman
Inman	F. M. Inman
Coronado Trail	R. L. Diggs
Nutrioso	R. L. Diggs
State Line	Liedeman, Shumate
Frisco Divide	Liedeman, Shumate
Beaver Head	Jess Burke

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The following organizations cooperate in the Arizona snow survey work:

FEDERAL

Department of Agriculture
Forest Service
Apache Forest
Coconino Forest
Coronado Forest
Gila Forest
Kaibab Forest
Prescott Forest
Sitgreaves Forest
Southwestern Forest and Range Expt.
Station, Fort Valley, Arizona
Soil Conservation Service
Division of Irrigation

Department of Commerce
Weather Bureau
Arizona Section

Department of Interior
Bureau of Reclamation
Region III
Geological Survey
Arizona District
Indian Service
Fort Apache Reservation
National Park Service
Grand Canyon National Park

Gila Water Commissioner
Safford, Arizona

IRRIGATION PROJECTS

Salt River Valley Water Users Association
Phoenix, Arizona

San Carlos Irrigation and Drainage District
Coolidge, Arizona

Southwest Lumber Mills, Inc., McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

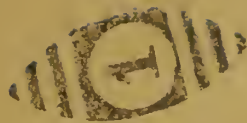


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SOIL CONSERVATION SERVICE

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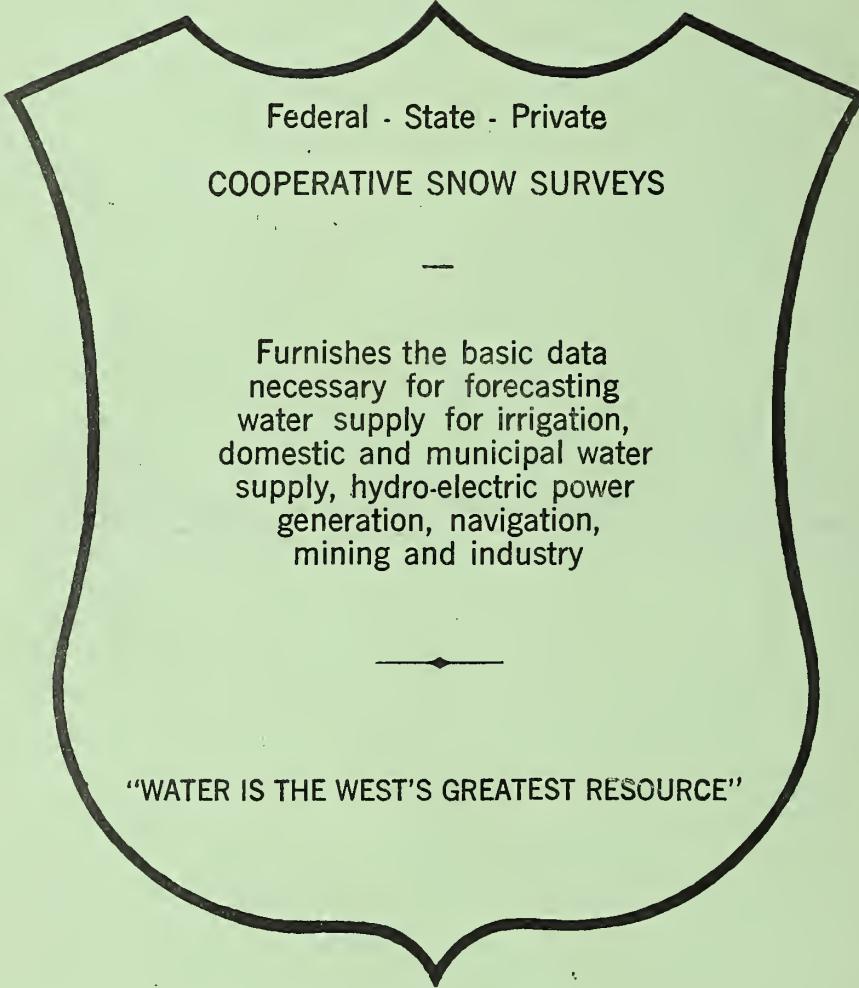


Ralph L. Shaw

Librarian

U. S. S. A.

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Federal - State - Private
COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"